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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19702A 6SR5, MISSILE NUMBER BR-9, ROUND NUMBER B-53. 25 OCTOBER--ETC(U)
OCT 79

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19702A GSRS, Missile Number BR-9, Round Number B-53 are presented in tabular form.		

410663

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INTRODUCTION

19702A GSRS, Missile Number BR-9, Round Number B-53, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1423:01 MDT 25 October 1979. The scheduled launch time was 1410 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RPTS T-9 pilot observation at:

SITE AND ALTITUDE

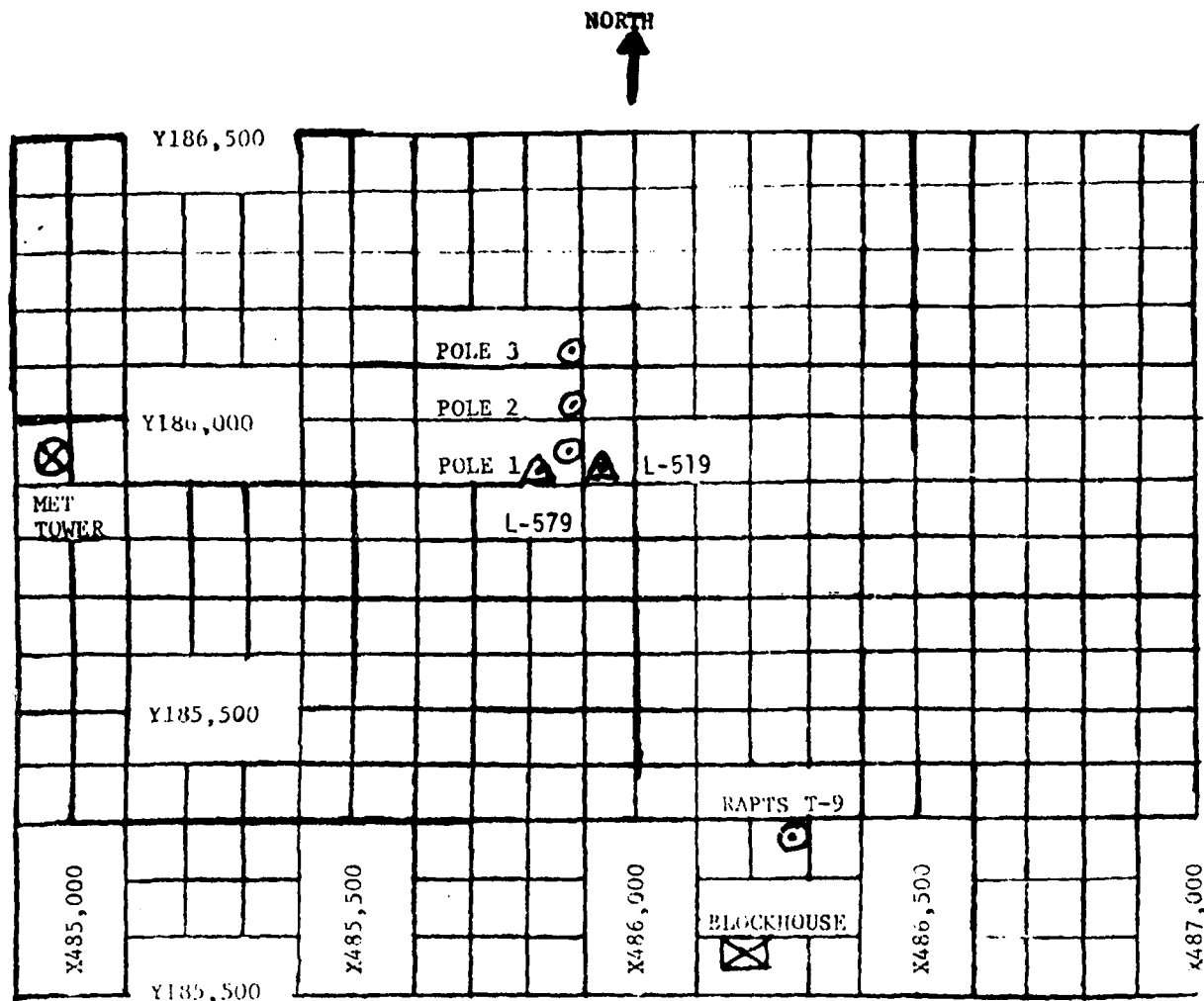
LC-33 2Km
NICK 2Km

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 34,500 feet in 500-foot increments.

SITE AND TIME

SMR 1300 MST

Acquisition For	RTIG
DOC TAB	CH-41
Unannounced	
Justification	
By	
Distribution/	
Availability Codes	
Avail and/or	
Special	
Dist.	23
	CF



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 17 ft, 92 ft, 102 ft, and 152 ft with E/A recorders.
2. POLE ANEMOMETERS - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

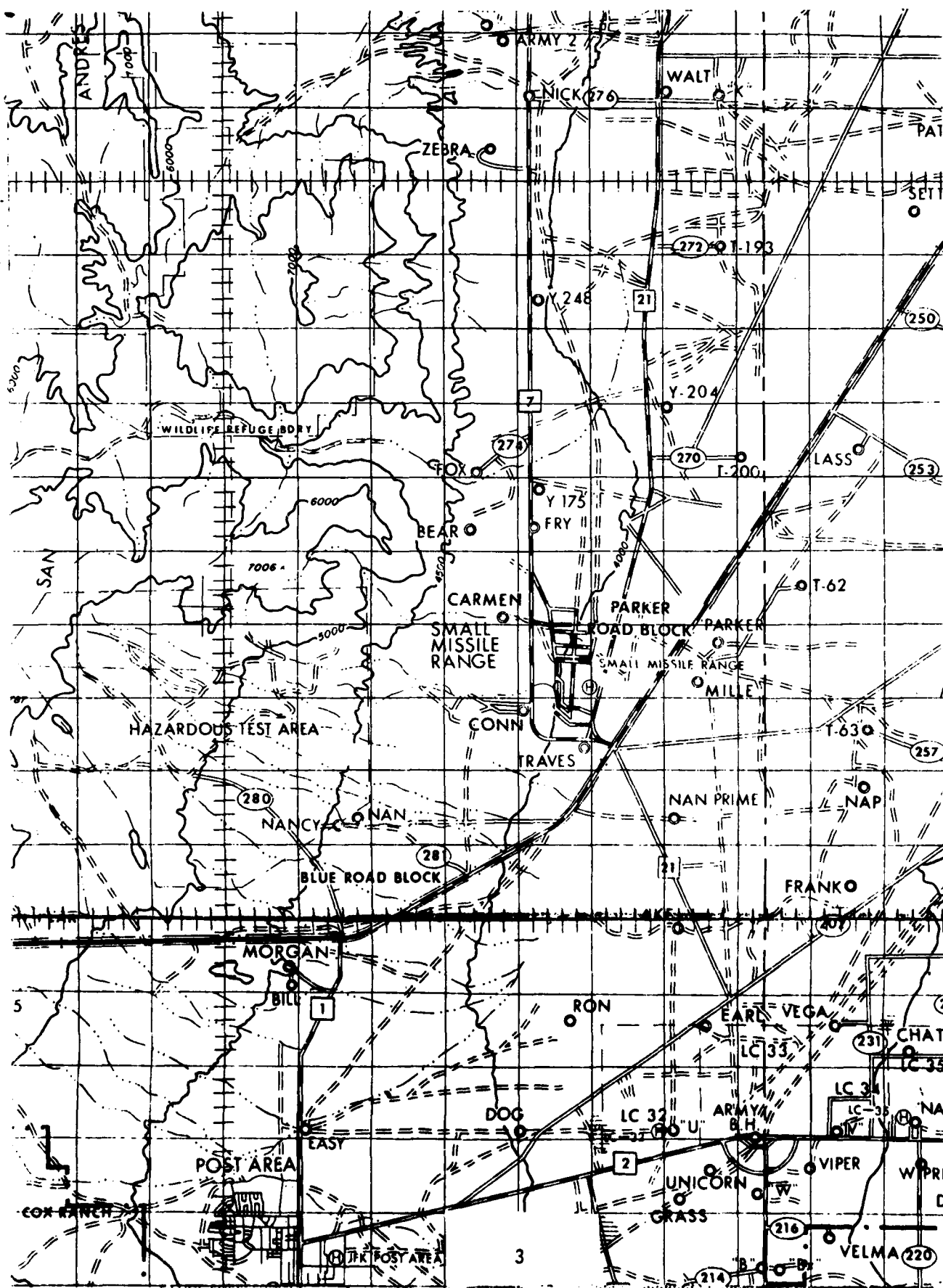


TABLE 1. Surface Observations taken at 1423 MDT,
25 October 1979, at LC-33, 19702A GSRS,
Missile Number BR-9, Round Number B-53.

ELEVATION	3977.30	FT/MSL
PRESSURE	879.2	MBS
TEMPERATURE	26.9	°C
RELATIVE HUMIDITY	18	%
DEW POINT	0.5	°C
DENSITY	1016	GM/M ³
WIND SPEED	03	KTS
WIND DIRECTION	155	DEGREES
CLOUD COVER	CLEAR	

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	137	MISG	-30	140	04	-30	131	02
-20	163	MISG	-20	170	05	-20	157	05
-10	153	MISG	-10	150	04	-10	160	06
0.0	164	MISG	0.0	148	07	0.0	145	08
+10	147	MISG	+10	141	06	+10	148	05

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft AGL

TABLE 2

TYPE 19702A GSRS MISSILE NO. BR-9 ROUND NO. B-53

LAUNCHED FROM LC-33 DATE 25 October 1979 TIME 1423 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1 12 Feet			LEVEL #2 62 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	229	03	-30	209	01
-20	230	03	-20	210	01
-10	230	02	-10		CALM
0.0	230	01	0.0	191	01
+10	230	01	+10	187	03
LEVEL #3 102 Feet			LEVEL #4 202 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30		CALM	-30	213	03
-20		CALM	-20	212	04
-10	180	01	-10	207	04
0.0	197	04	0.0	210	05
+10	182	03	+10	213	04

WTSM COORDINATES: X484,982.64 Y185,057.73 H3983.00 (base)

TABLE 3

TYPE 19702A GSRS MISSILE NO. BR-9 ROUND NO. B-53

LAUNCHED FROM LC-33 DATE 25 October 1979 TIME 1423 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 25 October 1979 TIME 1407 MDT

TRACKER COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3977.30

MISSILE TYPE 19702A GSRS MISSILE NO. BR-9 ROUND NO. B-53

MISSILE LAUNCHED FROM LC-33 DATE 25 October 1979 TIME 1423 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	175	04						
90	MISG	MISG						
150	MISG	MISG						
210	178	03						
270	180	02						
330	206	03						
390	200	03						
500	177	04						
650	191	05						
800	235	06						
950	252	08						
1150	251	10						
1350	258	11						
1550	244	08						
1750	209	06						
2000	232	11						

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33 DATE 25 October 1979 TIME 1423 MDT
 TRACKER COORDINATES (WSTM) X= 486,037.24 Y= 182.350.16 H= 3977.30
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-9 ROUND NO. B-53
 MISSILE LAUNCHED FROM LC-33 DATE 25 October 1979 TIME 1423 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	150	02
90	131	03
150	162	02
210	174	04
270	197	04
330	180	03
390	146	03
500	213	02
650	243	02
800	243	07
950	252	09
1150	256	11
1350	288	10
1550	231	07
1750	208	09
2000	232	11

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

GSRS PILOT BALLOON MEASURED WIND DATA

TABLE 6

RELEASED FROM _____ WICK DATE 25 October 1979 TIME 1423 MDT
 TRACKER _____ COORDINATES (WSTM) X= 470.734.56 Y= 255,775.64 H= 4126.57
 MISSILE TYPE 19702A GSRS MISSILE NO. BR-9 ROUND NO. B-53
 MISSILE LAUNCHED FROM LC-33 DATE 25 October 1979 TIME 1423 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC		CALM
90	MISG	MISG
150	190	04
210	140	03
270	130	06
330	135	06
390	145	07
500	165	04
650	185	03
800	225	03
950	261	07
1150	259	08
1350	257	08
1550	235	08
1750	247	07
2000	233	05

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS

STATION ALTITUDE 3997.30 FEET MSL
25 OCT. 79 1300 HRS MST
ASCENSION NO. 365

SIGNIFICANT LEVEL DATA
2980060365
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
679.1	3997.3	28.2	1.7	18.0
865.8	4437.6	24.4	-1.4	18.0
950.0	4964.1	22.4	-3.1	18.0
760.2	8103.5	14.7	-8.0	20.0
700.0	10377.6	11.1	-15.4	14.0
645.6	12577.9	7.2	-16.9	16.0
566.6	16048.3	-1.7	-19.1	25.0
500.0	19272.2	-9.7	-19.6	44.0
452.4	21784.9	-15.5	-31.0	25.0
400.0	24808.3	-21.2	-39.7	17.0
310.6	30773.8	-35.9	-50.7	20.0
300.0	31567.9	-36.1		
279.8	33160.9	-36.3		
260.0	34825.3	-39.8		

STATION ALTITUDE 3997.30 FEET MSL
25 OCT. 79 1300 HRS MST
ASCENSION NO. 365

UPPER AIR DATA
2980060365
S M P

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION, DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	879.1	28.2	1.7	18.0	1013.2	677.3	170.0	6.0	1.000255
4000.0	879.0	28.2	1.6	18.0	1013.2	677.3	170.0	6.0	1.000254
4500.0	863.9	24.2	-1.6	18.0	1009.9	672.5	181.6	4.7	1.000248
5000.0	848.9	22.3	-3.1	18.0	998.8	670.4	200.1	3.8	1.000244
5500.0	834.0	21.1	-3.9	18.3	985.3	669.0	226.2	3.4	1.000240
6000.0	819.3	19.9	-4.6	18.7	972.1	667.5	254.0	4.9	1.000236
6500.0	804.8	18.6	-5.4	19.0	959.0	666.1	266.7	7.7	1.000232
7000.0	790.6	17.4	-6.2	19.3	945.2	664.7	269.4	9.9	1.000228
7500.0	776.7	16.2	-7.0	19.6	933.5	663.2	270.4	12.0	1.000224
8000.0	763.0	15.0	-7.8	19.9	921.1	661.8	284.9	10.9	1.000221
8500.0	749.3	14.1	-9.2	19.0	907.5	660.7	290.4	9.5	1.000216
9000.0	735.9	13.3	-10.8	17.6	893.8	659.8	242.2	9.0	1.000212
9500.0	722.6	12.5	-12.4	16.3	880.3	658.8	227.2	9.2	1.000207
10000.0	709.7	11.7	-14.0	15.0	866.9	657.9	229.3	9.7	1.000203
10500.0	696.9	10.9	-15.4	14.1	853.8	656.9	232.1	10.2	1.000199
11000.0	684.2	10.0	-15.8	14.6	840.9	655.9	238.4	9.7	1.000196
11500.0	671.7	9.1	-16.1	15.0	828.2	654.8	244.8	9.3	1.000193
12000.0	659.5	8.2	-16.5	15.5	815.7	653.8	246.8	8.0	1.000190
12500.0	647.5	7.3	-16.8	15.9	803.4	652.8	250.0	6.4	1.000187
13000.0	635.4	6.1	-17.0	17.1	791.9	651.3	260.2	3.5	1.000184
13500.0	623.6	4.8	-17.2	18.4	780.7	649.9	301.5	1.8	1.000182
14000.0	612.0	3.6	-17.4	19.7	759.7	648.3	350.8	2.7	1.000179
14500.0	600.6	2.3	-17.8	21.0	750.9	646.8	358.7	4.0	1.000177
15000.0	589.4	1.0	-18.1	22.3	748.3	645.3	331.7	5.8	1.000174
15500.0	578.4	-0.3	-18.6	23.6	737.8	643.8	328.9	7.6	1.000172
16000.0	567.6	-1.6	-19.0	24.9	727.5	642.3	329.0	9.2	1.000169
16500.0	556.9	-2.8	-18.9	27.7	716.8	640.8	325.3	10.4	1.000167
17000.0	546.1	-4.1	-18.8	30.6	706.3	639.4	315.1	11.1	1.000165
17500.0	535.6	-5.3	-18.8	33.6	695.9	637.9	304.8	11.7	1.000162
18000.0	525.3	-6.5	-18.9	36.5	685.7	636.4	292.1	11.9	1.000160
18500.0	515.2	-7.8	-19.1	39.4	675.7	634.9	281.4	12.8	1.000158
19000.0	505.3	-9.0	-19.4	42.4	665.8	633.4	273.8	14.0	1.000155
19500.0	495.5	-10.2	-20.6	42.3	655.9	632.0	271.2	15.4	1.000153
20000.0	485.7	-11.4	-22.7	38.5	645.9	630.6	272.8	16.6	1.000149
20500.0	476.1	-12.5	-24.9	34.7	636.1	629.1	275.9	17.3	1.000146
21000.0	466.8	-13.7	-27.1	30.9	626.4	627.7	275.0	17.8	1.000143
21500.0	457.6	-14.8	-29.5	27.2	616.8	626.3	274.0	19.2	1.000140
22000.0	448.5	-15.9	-31.6	24.4	607.1	625.0	272.3	21.0	1.000138
22500.0	439.4	-16.8	-33.0	23.1	597.1	623.8	271.2	22.8	1.000135
23000.0	430.6	-17.8	-34.4	21.8	587.2	622.6	270.4	24.5	1.000133

STATION ALTITUDE 3997.30 FEET NSL
25 OCT. 79 1300 HRS MST
ASCENSION NO. 365

UPPER AIR DATA
2980060365
S M R

GEODETIC COORDINATES
32.46034 LAT DEG
106.42307 LON DEG

TABLE 8 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	421.9	-18.7	20.5	577.5	621.5	270.3	24.7	1.000130
24000.0	413.4	-19.7	19.1	568.0	620.3	270.5	24.0	1.000128
24500.0	405.1	-20.6	17.8	558.7	619.1	273.4	22.4	1.000126
25000.0	398.8	-21.7	17.1	549.5	617.8	278.9	20.3	1.000124
25500.0	388.4	-22.9	17.3	540.7	616.3	284.4	19.9	1.000121
26000.0	380.3	-24.1	17.6	531.9	614.8	289.2	20.4	1.000119
26500.0	372.3	-25.4	17.9	523.4	613.3	289.3	22.1	1.000117
27000.0	364.5	-26.6	18.1	515.0	611.8	288.1	24.1	1.000115
27500.0	356.9	-27.8	18.4	506.7	610.2	285.5	25.9	1.000114
28000.0	349.4	-29.1	18.6	498.6	608.7	282.5	27.6	1.000112
28500.0	342.0	-30.3	18.9	490.6	607.1	279.0	29.2	1.000110
29000.0	334.9	-31.5	19.1	482.8	605.6	275.5	30.7	1.000108
29500.0	327.8	-32.8	19.4	475.1	604.0	272.2	33.2	1.000106
30000.0	321.0	-34.0	19.6	467.5	602.5	269.3	35.9	1.000105
30500.0	314.2	-35.2	19.9	460.1	600.9	268.1	34.3	1.000103
31000.0	307.5	-36.0	14.3**	451.7	600.0	267.1	32.1	1.000101
31500.0	300.9	-36.1	1.7**	442.2	599.8	267.7	24.9	1.000099
32000.0	294.4	-36.2		432.7	599.7	269.5	16.9	1.000096
32500.0	288.0	-36.2		423.5	599.7	269.2	11.9	1.000094
33000.0	281.8	-36.3		414.4	599.6	267.5	7.3	1.000092
33500.0	275.6	-37.0		406.7	598.7			1.000091
34000.0	269.6	-38.1		399.6	597.3			1.000089
34500.0	263.8	-39.1		392.6	596.0			1.000087

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
25 OCT. 79 1300 HRS MST
ASCENSION NO. 365

MANDATORY LLVELS
2980060365
S M R

GEOETIC COORDINATES
32.48034 LAT DEG
106.42307 LONG DEG

TABLE 9

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4961.	22.4	-3.1	18.	198.4	3.8	
800.0	6674.	18.2	-5.7	19.	268.6	8.6	
750.0	8470.	14.1	-9.1	19.	256.9	9.6	
700.0	10367.	11.1	-15.4	14.	231.4	10.0	
650.0	12381.	7.5	-16.6	16.	248.8	7.0	
600.0	14522.	2.2	-17.8	21.	338.0	4.1	
550.0	16802.	-3.6	-18.8	30.	318.7	10.8	
500.0	19245.	-9.7	-19.6	44.	270.4	14.8	
450.0	21893.	-15.7	-31.3	25.	272.6	20.7	
400.0	24767.	-21.2	-39.7	17.	276.5	21.1	
350.0	27950.	-29.0	-45.4	19.	282.6	27.6	
300.0	31505.	-36.1			267.8	24.1	

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.